2/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129983

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REGULAR SYNTHETIC POLYTRIPEPTIDES WITH GLYCINE IN THE 1ST AND AMINO OR IMINO ACIDS IN THE 2ND AND 3RD POSITION WERE STUDIED AS MODELS OF STRUCTURAL PECULIARITIES OF COLLAGEN PROTEINS. THE NECESSARY AND SUFFICIENT CONDITION FOR THE EXISTENCE OF COLLAGEN STRUCTURE IS THE OCCURRENCE OF GLYCINE IN THE 1ST AND OF AT LEAST ONE IMINO ACID IN THE 2ND OR 3RD POSITION IN THE TRIPLET. X RAY ANAL. OF CRYST. GLYCINE,IMINO ACID,AMINO ACID POLYMERS VERIFIED THE ROLE OF AGGREGATES OF THIS TYPE IN THE STRUCTURE OF COLLAGEN.

FACILITY: INST. MOL. BIOL., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203710009-7"

USSR

UDC 621.357.2:66.061:669.783

BIKASHEV, G. K., YESIRKEGENOV, G. M., and KHUDAYBERGENOV, T. YE.

"The Influence of Fe:Ge Ratio on the Migration of Germanium in Solution During the Electrochemical Leaching of Sintered Wafers of the Type $xFe_2O_3yGeO_2$"

Kazakhsk, politkh. in-t. Alma-Ata (Kazakstan Polytechnica Institute of Alma-Ata), 1972, 12 pp (Manuscript from a dep (expansion unknown) in VINITI (All-Union Institute of Scientific and Technical Information), No 5058-5072 Dep. (expansion unknown) from 13 Nov 1972 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L310)

Translation: Data are presented on laboratory studies on the leaching of wafers containing the oxides of Fe and Ge. Double sulfuric acid treatment of these wafers resulted in the extraction of 5 or 6% Germanium into solution. Applying an electric field having a constant current during the second stage of leaching very effectively transferred the Ge into a liquid phase.

1/1

USSR

UDC 681.208

YESIYEV, M. K., Candidate of Technical Sciences, SUBBOTIN, Yu. A., Engineer

"The Ordering of Measured Parameters"

Moscow, Izvestiya Vysshykh Uchebnykh Zavedeniy, Mashinostroyeniye, No 12, 1970, pp 60-64

Abstract: A normal linear model of an object is introduced, which explains all the correlations or covariantions of the parameters of the action of an arbitrary number of orthogonal causes, the property of which is unknown. By using the relationships of factor analysis, it is possible to determine the loads of any variable upon any factor. Variations of weights upon the factors, which have obtained a physical interpretation, may be used as a means for determining the information value of the measured parameter with respect to an objectively acting perturbing cause. 8 bibliographic entries.

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1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ASYMPTOTIC PROPERTIES OF A SOLUTION TO A CAUCHY PROBLEM FOR THE HEAT CONDUCTION EQUATION -U-

AUTHOR--YESKIN, L.D.

COUNTRY OF INFO--USSR

SOURCE--MATEMATIKA, FEB. 1970, P. 100-106

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ASYMPTOTIC PROPERTY, CAUCHY PROBLEM, THERMAL CONDUCTIVITY, DIFFERENTIAL EQUATION SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1502 STEP NO--UR/0410/70/000/000/0100/0106

CIRC ACCESSION NO--AP0118489

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118489

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE ASYMPTOTOC BEHAVIOR OF A SOLUTION TO THE CAUCHY PROBLEM OF THE HEAT CONDUCTION EQUATION. A THEOREM AND SEVERAL LEMMAS ARE DERIVED AND PROVED TO ESTIMATE THE RESIDUAL MEMBER IN THE TERM U(X, T) WHEN T TENDS TO INFINITY.

UNCLASSIFIED

USSR UDC 595.799:578.084

YES'KOV, Ye. K., Scientific Research Institute of Beekeeping, Rybnoye, Ryazanskaya Oblast

"On the Characteristics of the Acoustic Signal of Distance Used by Honey Bees (Apis mellifera)"

Moscow, Zhurnal Obshchey Biologii, Vol 33, No 2, Mar/Apr 72, pp 217-222

Abstract: Research was conducted to determine the effect of environmental changes and the extent of hereditary influences on the characteristics of the honey-bee's signal of distance for the purpose of evaluating the reliability of using the acoustic indexes of this signal for race identification. Bees reared in the hive of another race preserve the characteristic signal of their own race, thus the signal is hereditary. Amount of food, size of hive, and external temperature do not change the indexes of the signal of distance. Substantial temperature reduction inside the hive (to 16-17°C) increases the signal's duration and quantity of periods in the pulse, and decreases the pulse repetition rate, but does not affect the carrier frequency. Only the structure of the pulse is affected by the age of the bee. Indexes do not depend on the "dancer's" orientation to the sun or, in the dark, on gravity. Effectiveness of communication and signal

USSR

YES'KOV, Ye. K., Zhurnal Obshchey Biologii, Vol 33, No 2, Mar/Apr 72, pp 217-222

structure are not influenced by the "dancer's" orientation in the horizontal plane if it can see the sky. In this, Apis mellifera is shown to have a more highly developed signaling mechanism than other representatives of the genus Apis. The indexes of the signal of distance may be used as a reliable device for race identification of A. mellifera under almost any conditions of bee foraging.

2/2

USSR

UDC 595:799:654.92

YES'KOV, YE. K., Scientific Research Institute of Agriculture, Rybnoye, Ryazanskaya Oblast

"Racial Specificity of Sound Signals of Bees Transmitting Information on Flight Distance to Food Source"

Moscow, Zhurnal Obshchey Biologii, Vol 32, No 2, Mar/Apr 71, pp 217-223

Abstract: Sound signals emitted by Apis mellifera ligustica and Apis mellifera carnica "dancers" were recorded under various experimental conditions. Some "dancer" bees were born and grew up in their own hives, while others were hatched in incubators and subsequently placed into other hives to grow up among bees of the other race. The sound records were analyzed for duration of the signals, wave frequency, and number of impulses comprising one signal. While it is known that the behaviro of bees is modified by individual experience, the results of this investigation have shown that neither the company of bees belonging to a different race, nor the concentration of sugar in the syrup, nor its aroma change the sound signals. The duration of the signals changes only with the flight distance to the food source, to which it is directly proportional. Since bees of one race raised among bees of another race do not change their sound signals, the conclusion is drawn that these signals represent a hereditary property which mya be used to identify the race of a bee.

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USSR

YES'KOV, Ye. K., Scientific Research Institute of Agriculture, Rybnoye, Ryazanskaya Oblast

"Selective Reaction of Bees to Sound Signals"

Moscow, Biofizika, Vol 16, Vyp 4, Jul/Aug 71, pp 743-745

Abstract: Reactions of bees to auditory stimuli were investigated in early spring when their activity in the hives increases but they are still unable to leave the hives. Tapes on which sounds emitted by alarmed bee families were previously recorded (intensity in the frequency range of 120-180 c/sec increased by 20 db above the normal level) were replayed through a transmitter located in the test hive. The bees responded by increasing their sounds by 6-7 db in the 120-180 c/sec range. When pure sounds of the frequency of 500 c/sec were played, the bees responded in 2-3 mins by lowering the whole range of their sounds by 3-4 db. It is concluded that bees are able to differentiate various sounds and that they use sound signals for communication.

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USSR

UDC 595.796 Formicinae: 691.582

YES'KOV, Ye. K., Institute of Apiculture, Rybnoye, Ryazanskaya Oblast

"Acoustic Signals of Ants (Formicinae)"

Moscow, Zoologicheskiy Zhurnal, No 5, 1973, pp 709-713

Abstract: Observations on the carpenter (Camponotus herculeanus) and cornfield (Lasius niger) ants showed that the sounds emitted by these insects are caused by their knocking against the substrate on which they happen to be. The abdomen, less commonly the mandibles, is used for this purpose. The sounds are actually made by the substrate and their intensity and spectral composition varies with the acoustic properties of the substrate. The sounds are emitted primarily to alert other ants to danger and stimulate their defensive reactions. The substrate is used not only to generate but to transmit signals. Sounds propagated via the air do not appear to have any information value for the ants under study.

USSR UDC 595.799:591.5

YES'KOV, YE. K, Scientific Research Institute of Agiculture

"Sound Background of a Bee Colony"

Moscow, Zoologicheskiy Zhurnal, No 2, 1970, pp 241-248

Abstract: The intensity of the sound background of a beehive is directly related to the activity of the bees. It is most influenced by the ambient temperature, and is highest in summer and lowest in winter. In the course of a year it varies by 38-42 db. Diurnal temperature fluctuations alter the intensity of the background by 5-6 db. The extent of the diurnal fluctuations in intensity varies with the temperature range and amount of nectar brought to the hive. The higher the temperature and the lower the range of fluctuations during the day, the less the intensity of the sound background is affected. The sound background of a colony under normal conditions lies within a frequency range of 20 to 12,000 Hz (range of intensities 40 db). The stable frequency constituents lie in the 60 to 500 Hz range. Some of these constituents may serve as signals for the members of the hive.

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USSR

UDC 595.799:654.92

YES'KOV, Ye. K., Scientific Research Institute of Apiculture, Rybnoye, Ryazanskaya Oblast, Presented by Academician A. N. Belozerskiy

"Correction of the Acoustic Signal of Distance by Bees in the Presence of Sound Disturbance"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 1, 1972, pp 211-213

Abstract: The signal emitted by bees to indicate the distance to a target is determined by the frequency, amplitude, and pulsation of the background noise. Usually the intensity of the distance signal (220-320 hz) is 15-18 db greater than the intensity of the background noise. When the bees are excited and the background noise increases, the distance signal is made appropriately louder or is shifted to higher frequencies (450-500 hz). If this frequency range is also filled by the background noise, the distance signal is spread over a wide frequency band to cover all background noise and exceed it in intensity. This indicates that the hearing organs of bees are able to discriminate the frequency of sound waves.

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USSR

UDC 612.57

BASHENOV, YU. I., YES'KOVA, L. A., Laboratory of General Physiology, Institute of Physiology, Siberian Department of the Academy of Sciences USSR Novosibirsk

"Effect of Different Periods of Cold Adaptation on Muscular Thermogenesis in White Rats"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 9, 1972, pp 1,410-1414

Abstract: A study was made of the quantitative characteristic of muscular thermogenesis in rats subjected to varying periods of cold adaptation. Adaptation to cold significantly decreases the electrical acitivty of the muscules in response to cold. This effect is more pronounced in prolonged (20-22 weeks) adaptation than in adaptation periods (4-6 weeks). In rats adapted to cold for 20-22 weeks the thermal effect of the muscular contractions (according to the oxygen consumption) is 1.9 times higher than in rats with shorter adaptation adn 2,7 times higher than the control animals. The establishment of a relation between oxygen consumption by the entire organism and the total activity of a large number of muscle groups is further indication of the role of the skelotal musculature in chemical thermoregulation and its significance in general thermogenesis as a result of cold adaptation. 1/1

USSR

UDC: None

YUSHKEVICH, Kh. M.

"Optimal Solution of a Multi-Extremal Problem"

Alma Ata, Vestnik Akademii Nauk Kazakhskoy SSR, January 1971, pp 66-68

Abstract: In this brief article the author solves a problem which, in his opinion, has not been previously solved. Simply stated, it is the following: Given a set of n points in a metric space E^2, to construct a tree with vertices at the given points whose length does not exceed that of any other tree with vertices at the same points. Obviously, these points should not lie on the same straight line, since the solution would then be a segment of that line. The desired tree may have any arbitrary number of additional vertices other than the given points, provided the addition of these vertices leads to a reduction in the tree's overall length. Solutions have been found only for n less than or equal to 3. The author considers the problem's solution to be a multistage process with the input of each stage given a certain number of sets and one less set at its output; thus, the n-1 stage will have two sets at its input and just one at its output.

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1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--MOISTURE RESISTANCE AND CRYSTALLIZATION OF FLUOROBERYLLATE GLASSES -U-

AUTHOR-(03)-NIKOLINA, G.P., KHALILEV, V.D., YESTROPYEV, K.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 582-4

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CRYSTALLIZATION, FLUOROBERYLLATE GLASS, GLASS COMPOSITION, GLASS PROPERTY, FLUORIDE, MOISTURE MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0631 STEP NO--UR/0363/70/006/003/0582/0584

CIRC ACCESSION NO--AP0119543

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119543

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF MUTUAL EXCHANGES OF FLUORIDES OF BE, K, AL, AND ALKALI EARTH ELEMENTS ON THE STABILITY TO CRYSTN. AND ON HYDROLYTIC STABILITY OF FLUOROBERYLLATE GALSSES CONTG. 54-49 MOLE PERCENT BEF SUB2 WAS STUDIED. THE SAMPLES WERE PREPD. BY CONVENTIONAL METHODS, AND SEVERAL SERIES OF THE EXPTS. WERE PERFORMED. THE SUBSTITUTION OF KF BY MGF SUB2 OR SRF SUB2 SIGNIFICANTLY INCREASES THE MOISTURE RESISTANCE OF THE INITIAL GLASS, BUT DECREASES ITS STABILITY TO CRYSTN. THE SIGNIFICANT DIFFERENCE IN THE SOLY. OF THE CRYST. CLUORIDES DOES NOT MANIFEST ITSELF IN THE SOLY. OF THE GLASSES. IN ORDER TO INCREASE THE MOISTURE RESISTANCE IT IS EXPEDIENT TO DECREASE THE CONTENT OF BEF SUB2 ANS KF IN THE GLASS. GLASSES BE54, BE54M, BE54MB, BE48L4, AND B4 WERE STUDIED. ON THE INTRODUCTION INTO THE GLASS OF YF SUB3 AND LAF SUB3, THE MOISTUE RESISTANCE INCREASES. HOWEVER, CRYSTN. THEREBY ALWAYS INTENSIFIES. AN ATTMEPT WAS MADE TO EXPLAIN THIS BEHAVIOR. FROM THE EXPTL. DATA OBTAINED IT IS SHOWN THAT COMPLICATING THE COMPN. OF FLUOROBERYLLATE GLASSES BASED ON THE BEF SUB2-ALF SUB3-CAF SUB2-KF SYSTEM BY THE INTRODUCTION OF FLUORIDES OF ALKALI EARTH AND OTHER CATIONS INSTEAD OF BEF SUB2 AND KF RESULTS IN OBTAINING GLASSES WITH MOISTURE RESISTANCE WHICH IS HIGHER THAN THAT OF THE LATTER HYDROLYTIC GROUP. ADDNS. OF NDF SUB3 INCREASE THE MOISTURE RESISTANCE TO A HIGHER DEGREE THAN ADDNS. OF CEF SUB3. FACILITY:
LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

YESYPENKO, B. Ye.

BIBLIOGRAPHIC DATA SHEET	1. Report No. JPRS 58796	2.
4. Title and Subtitle: A MODEL FOR WATER METABOLISM IN THE ORGANISM		5. Report Date: 19 April 1972
7. Author(s): B. Ye. Yesypenko, V. P. Solovyov		8. Performing Organization Rept. No.
9. Performing Organization Name and Address: Joint Publications Research Service 1000 North Glebe Road Arlington, Virginia 22201		10. Project/Task/Work Unit No. 11. Contract/Grant No.
12. Sponsoring Organization Name and Address: As above		13. Type of Report & Period Covered: 14.

15. Supplementary Notes: Translation of article from Ukrayins'kyy-language journal FIZIOLOHICHNYY ZHURNAL, No 1, 1971, KIEV.

16. Abstracts: The report studies the effect of salt and water loading and dehydration on an organism's water and electrolyte metabolism.

17. Key Words and Document Analysis. 17a. Descriptors: USSR, Physiology

17b. Identifiers/Open-Ended Terms:

17c. COSATI Field/Group: 06P

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THIS FORM MAY BE REPRODUCED

Dept. of Water-Salt Physiology, Inst. of Physiology imeni O.O. Bogomolets, AS USSR, Kiyev

JPRS 58796

19 April 1973

UDC 612.014.461.3

A MODEL FOR WATER METABOLISM IN THE ORGANISM

[Article by B. Ye. Yesypenko and V. P. Solovyov, Department of Water-Salt Physiology, Institute of Physiology imeni O. O. Bogomolets, Academy of Sciences of the Ukrainian SSR, Kiev; Kiev, Fiziolohichnyy Zhurnal Akademiyi Nauk Ukrayins'koyi RSR, Ukrainian, Vol 29, No 1, 1973, pp 58-62]

The data accumulated in recent years by the collaborators of the Department of Water-Salt Physiology of the Institute of Physiology imeni O. O. Bogomolets of the Academy of Sciences of the Ukrainian SSR indicate that various specific factors (salt and water loading, dehydration) which affect an organism's water and electrolyte metabolism induce changes in the total body water content -- primarily as a result of change in the volume of the intracellular compartment [7, 8] -- but also through changes in the volume of the circulating plasma [9], the blood concentrations of albumin [9], glucose [10], potassium [4], and sodium [9], and affect the secretory rate of the digestive glands with a concomitant secretion of water and electrolytes [2, 6], and alter the water content in the lumen of the gastrointestinal tract [3], the rate of water absorption from the gut and, finally, the intensity of the renal diuretic function [2, 8]. A reciprocal type of relationship was found to prevail between indices reflecting water-salt, protein, and carbohydrate metabolism and the processes of water excretion in the secretions of the digestive glands into the gut lumen, and from the organism by the kidneys [5].

These considerations made possible a more detailed evaluation of water metabolism in the organism in terms of distinct interactions between the different aspects of this process which is responsible for maintaining a constant internal environment, and provided a basis for the formulation of a model of water metabolism in the organism. In the present case the volume of the extracellular compartment was the parameter of concern and which we had established to be relatively constant under extreme conditions (specifically, daily loading of an animal with a water volume equivalent to 5 to 10 percent of body weight for a period of 5 days).

Figure 1 presents a functional diagram of water metabolism in an organism which takes into consideration the relationship between the

[I - USSR - C]

extracellular compartment (ECC) and the kidneys (K), the intracellular compartment (ICC), and the gut lumen (GL). The digestive glands (DG) are responsible for the last relationship.

Figure 1. Functional Diagram for Water Metabolism in an Organism (Abbreviations are explained in the body of the text)

The exchange of water between the internal environment of the organism and the GL probably acts as a buffer which, along with the diuretic function of the kidneys and the exchange of water between the ECC and the ICC, prevents significant disturbances in water volume of the internal environment. On the other hand, it is conceivable that the exchange of water between the internal environment and the GL regulates other indices of the internal environment which, in turn, control the functional state of various organs and systems, such as the diuretic function of kidneys, which is the primary regulator of salt and water metabolism. It has been observed that the administration of water into the GL results in greater diuresis than is the case if water is administered intravenously. This indicates the importance of the transfer of water from the blood to the GL by the DG in the maintenance of water-salt homeostasis in the organism, and suggests the need for a detailed study of this process in connection with other processes of water-salt metabolism.

We had previously proposed certain principles for the formulation of models depicting water-salt metabolism in the organism, which specifically pertained to the process of water redistribution between the various compartments [1, 11, 12, 13]. These principles, used in conjunction with experimental data [2-10], would allow a mathematical description of water metabolism in the organism as depicted in the diagram in Figure 2.

The scheme provides for an integrator (I), an aperiodic link (AL), a delaying link (DL), function transformers (F), inertialess (hoelinear) blocks, and a summating device. Variables and parameters are represented as follows: q_1 is the influx rate of exogenous water into the GL, q_2 is the rate of water absorption from the GL to blood, q_3 is the total current of water across the membrane separating the ECC and the

USSR

UDC 53.07/.08+53.001.5

SHERSTKOV, Yu. A., RYBAKOV, V. A., GORLOV, A. D., YESYUNIN, V. N.

"An Electromagnet Current Stabilizer"

Uch. zap. Ural'sk. in-ta (Scientific Notes of the Ural Institute), 1971, No 118, pp 113-117 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A321)

Translation: The electron paramagnetic spectrometers currently used for studying the structure of the spectra of free radicals and the complex spectra of elements of the transition groups utilize electromagnets with electronic current stabilization of at least 10^{-5}-10^{-6}. The proposed supply circuit is designed for field stabilization in a radiospectrometer of the single-klystron type. The current stabilizer is designed for feeding magnets with a power of up to 3.5 kVA and stabilizes the magnetic field to 10^{-6}. The magnet provides a field with a strength of up to 10 000 oersteds in a gap of 60 mm with a pole piece diameter of 250 mm and a winding resistance of 800 ohms. A diagram of the device is presented and its operation is described. A nuclear magnetic resonance pickup (IMI-2) is used for evaluating the stability of the magnetic field. Operation of the device over a three-year period has shown that it satisfies all requirements for the supply source of magnets in NMR spectrometers; it is convenient and reliable in use. B. N. Kraynov.

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USSR

UDC 669.083.4

REZNYAKOV, A. A., ISAKOVA, R. A., YESYUTIN, V. S., NESTEROV, Y. N., NECHIPORENKO, G. I., MORDZOV, I. F., ZHUKOV, P. I., ZAVADSKAYA, N. F., and KALININ, V. Ya.

"Increasing the Effectiveness of Vacuum Refining of Selenium"

Moscow, Tsvetnyye Metally, No 1, Jan 70, pp 54-57

Abstract: Data were obtained which confirm the results of previously conducted laboratory investigations regarding the possibility of producing high-quality commercial Se in a single operation. At 450° and a vacuum of 0.6 mm Hg, the output of the apparatus was 2 t/m^2 per day. The yield of high-quality Se was 80%; highly volatile fractions and mother liquor accounted for 15 and 5%, respectively. During prolonged operation of the apparatus the disks overgrown with shalliness, which formed as the result of the precipitation of metal selenides suspended in Se. An investigation of the filtration of fusion and vapors of Se showed that it is possible to produce high-quality commercial Se in a single operation. The process has been introduced into Se production.

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1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--A MICROSCOPE STUDY OF MEMBRANE POTENTIAL OF THE FROG'S BLADDER PARASYMPATHETIC GANGLION'S NEUTONESS -U-

AUTHOR-(03)-BAZANOVA, I.S., VOROBYEVAND, V.S., YEUDOKIMOV, S.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHESKIY ZHURNAL SSSR IMENI I. M. SECHENOVA, 1970, VOL 56, NR 5, PP 718-724.

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NEURON, GENITOURINARY SYSTEM, BIOPOTENTIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1172 STEP NO--UR/0239/70/056/005/0718/0724

CIRC ACCESSION NO--AP0126774

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0126774
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MEMBRANE POTENTIAL WAS SHOWN TO BE 72 PLUS OR MINUS 16.5 MV. A MICROELECTRODE OF LESS THAN I MICRON IN DIAMETER DOES NOT APPARENTLY INJURE A NEURON WHILE PENETRATING IT. NEITHER REPEATED INSERTING OF THE MICROELECTRODE CAUSES ANY STRUCTURAL CHANGES OR CHANGES IN THE MEMBRANE POTENTIAL. WHILE MICROELECTRODE OF MORE THAN 2 MICRONS IN DIAMETER CAUSES SHARP STRUCTURAL CHANGES..
FACILITY: PAVLOV'S INSTITUTE OF PHYSIOLOGY ACAD. SCI. USSR, LENINGRAD.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203710009-7"

UNCLASSIFIED PROCESSING DATE--11SEP70

1/2 020

TITLE--ON THE ORIENTED EMANATION OF THE MOVING VIBRATOR, EXCITED THE SEISMIC OSCILLATIONS AS A SINUSOIDAL SIGNAL WITH LINEARLY MODIFIED

AUTHOR--CHICHININ, I.S., YEVCHAIOV, G.P.

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA, I GEOFIZIKA, 1970, NR 1, (121) PP 102-109

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SEISMIC WAVE, SEISMOGRAPH, OSCILLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1288 STEP NO--UR/0210/70/000/001/0102/0109

CIRC ACCESSION NO--AP0103170

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103170

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT SHOWN THAT THE VIBRATOR MOVED ONCE THROUGH THE PROFILE EXCITES THE SEISMIC WAVES WITH WEAKLY DEVELOPED ORIENTATION EFFECT. THE WAVES, JAMMING (WITH LOW SEEMED VELOCITIES) ARE ESSENTIALLY DECREASED IN AMPLITUDE IN THE CASE OF VIBRATOR MOVEMENT WITHIN THE LIMITS OF SOME BASE DURING THE WORK AND "RUN" ALONG THE TIME AXIS OF THE SEISMOGRAM.

UNCLASSIFIED 0123

USSR

UDC 547.458.5

YEVDAKOV, V. P., KHORLINA, I. M., and KHELEMSKAYA, N. M.

"The Use of Amides of Trivalent Phosphorus Acids in the Synthesis of Polygalacturonic Acid Amides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 2, Feb 73, pp 388-393

Abstract: It was shown that amides of phosphorus acids may be used in the conversion of carboxyl and ester groups of acid polysaccharides into amides. This reaction is not accompanied by phosphorylation of the polysaccharide hydroxyl group to any noticeable degree. Varying the reaction conditions -- time, temperature -- the N,N-diethylamides of polygalacturonic acid may be obtained with the desired degree of amide content, from 10 to 85%.

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1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--MONALKYL, MONARYL, ESTERS OF ALKYLPHOSPHINIC ACIDS -U-

AUTHOR-(03)-PETROV, K.A., YEVDAKOV, V.P., MIZRAKH, L.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 159,824
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--26JAN70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOSPHINIC ACID, ORGANIC PHOSPHORUS COMPOUND, ESTER, CHEMICAL PATENT, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1748 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136983
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136988

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPDS. ARE PREPD. BY TREATING DIALKYLPHOSPHINIC ACID DICHLORIDE WITH 1 MOLE H SUB2 O AND THEN WITH 1 MOLE ALC. OR PHENOL.

UNCLASSIFIED

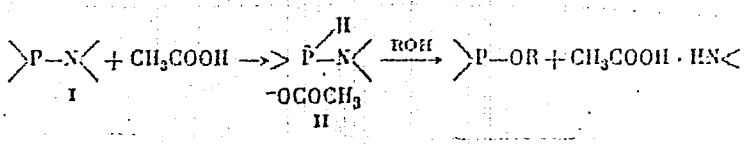
USSR UDC 547.26'118

YEVDAKOV, V. P., BEKETOV, V. P., and SVERGUN, V. I.

"Interaction of Amido Phosphites and Acetyl Phosphites with Acetic Acid, Alcohols and Phenol"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 55-59

Abstract: By studying the interaction of the amides of the acids of trivalent phosphorus (I) with hydroxyl-containing compounds it has been shown that the phosphorylation of the alochols by amides is accelerated in the presence of acetic acids [E. Ya. Nifant'yev, et al., Vestn. MGU, No 4, 104, 1968; E. Ye. Nifant'yev, et al., ZhOKH, No 39, 854, 1969; E. Ye. Nifant'yev, et al., ZhOKH, No 36, 865, 1966]. This phenomenon is related to the formation of the extremely reactive intermediate quasiphosphonium compound (II) by which a nucleophilic attack of the alcohol takes place ending in the formation of the trialkyl phosphite.



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USSR

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YEVDAKOV, V. P., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 55-59

Upon treating the amides (I) with acids under mild conditions, the corresponding acyl phosphites are formed [E. Ye. Nifant'yev, et al., ZhOKh, No 38, 1909, 1968], in turn the acyl phosphites easily phosphorilate the alcohols [V. I. Yevdakov, et al., ZhOKh, No 33, 3770, 1963]. Thus, possible the acceleration of the reaction with alcohols in the presence of acetic acid is connected with the appearance in the reaction mixture of the acetyl derivative of trivalent phosphorus.

$$\rangle P{-}N\langle + CH_3COOH \rightarrow \rangle P{-}OCOCH_3 + HN\langle \xrightarrow{ROH} \rangle P{-}OR + CH_3COOH \cdot HN\langle$$

Accordingly, a study was made of the interaction of the amides (I) and acetyl phosphites with alcohols and phenols in the presence of acids and without them. The acceleration of the phosphorylation of the hydroxyl-containing compounds by amides of the trivalent phosphorus acids in the presence of acids for phenol is connected with the formation of acyl phosphites or aryl phosphites in the reaction mixture. The alcoholysis of the acyl phosphites is accelerated by tertiary amine additives.

2/2

USSR

UDC 547.26'118

PUDOVIK, A. N., ZIMIN, M. G., YEVDOKIMA, V. V., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Reactions of α-Ketophosphonates with Ethyl Cyanoacetate and Malononitrile"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul 72, pp 1489-1493

Abstract: Continuing their research on the activity of the carbonyl group in addition reactions with α-ketophosphonic acid esters, the authors studied the behavior of these phosphonates with ethyl cyanoacetate and malononitrile. Reactions of diethyl aceto- and benzoylphosphonates with ethyl cyanoacetate at 120°C in the presence of catalytic quantities of piperidine or diethylamine produced diethyl α-methyl(phenyl)-β-cyano-β-carbethoxyvinylphosphonates in 26-27% yield. The reactions are accompanied by considerable tarring and formation of large quantities of low-boiling fractions. The resultant vinylphosphonates (II) were identified by ultimate analysis and their IR spectra. Malononitrile reacted with dimethyl, diethyl, di-n-propyl and diisopropyl acetophosphonates, and with diethyl and di-n-butyl benzoylphosphonates. Addition of catalytic quantities of piperidine to the initial mixture of components causes heating to 70-100°C. The reaction products in the case of the dialkyl acetophosphonates were dialkyl α-methyl-β-car-

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USSR

PUDOVIK, A. N., et al., Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul 72, pp 1489-1493

bamido- β-cyanovinylphosphonates (V). The reactions with benzoylphosphonates yielded dialkyl α'-phenyl- β, β-dicyanovinylphosphonates.

2/2

1/2 029 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--THERMOPHYSICAL AND THERMOMECHANICAL PROPERTIES OF A LEAD SINTER -U-

AUTHOR-(02)-KOVGAN, P.A., YEVDOKIMENKO, A.I.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(2), 13-16

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--POWDER METAL SINTERING, LEAD, THERMAL CONTRACTION, THERMAL CONDUCTIVITY, TEMPERATURE DEPENDENCE, THERMAL STABILITY, PARTICLE SIZE

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DOCUMENT CLASS--UNCLASSIFIED

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CIRC ACCESSION NO--AP0108253

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108253

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HEAT CONSUMPTION, SP. HEAT, TEMP. COND., HEAT COND., AND SHRINKAGE OF PB SINTER INCREASED WITH TEMP. INCREASE AT SMALLER THAN OR EQUAL TO 900DEGREES. LUMP SINTER SHOWED A GREATER INCREASE THAN SINTER POWD. TO 1-3 MM. THE LUMPS HAD GREATER HEAT STABILITY IN MECH. STRENGTH.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203710009-7"

USSR

UDC 662.69:669.2

YEVDOKIMENKO, A. I., KOSTERIN, V. V., Deceased

"Natural Gas in Nonferrous Metallurgy"

Prirodnyy Gaz v Tsvetnoy Metallurgii [English Version Above], Moscow, Metallurgiya Press, 1972, 240 pages.

Translation of Annotation: The scientific principles and methods are presented, apparatus and results are described from the application of natural gas to processes in nonferrous metallurgy.

Particular attention is given to the application of natural gas in such processes as charge and reflective melting, fuming of slags and flame refining of copper. New research and operational materials are presented.

The book is designed for workers of scientific research and planning institutes, as well as engineering and technical workers of enterprises and other nonferrous metallurgy organizations. It may be useful to students at metallurgical colleges and technical schools. 87 Figures; 29 Tables; 92 Biblio. Refs.

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YEVDOKIMENKO, A. I., KOSTERIN, V. V., Prirodnyy Gaz v Tsvetnoy Metallurgii, Moscow, Metallurgiya Press, 1972, 240 pages.

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USSR

YEVDOKIMENKO, A. I., KOSTERIN, V. V., Prirodnyy Gaz v Tsvetnoy Metallurgii, Moscow, Metallurgiya Press, 1972, 240 pages.

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YEVDOKIMENKO, YU. N.

RADIO ENGINEERING / DIODE SWITCHING DEVICES

JPRS 54764

22 December 1971

NONLINEAR AND MICROWAVE RADIO ENGINEERING SYSTEMS

Selected articles from the Russian-language book edited by Ye. D. Gakhzakh, corresponding member of the USSR Academy of Sciences and V. I. Sanoylenko, candidate of engineering sciences, Trudy 1 Sverkhvysokochastotnyye Radiotekhnicheskiye Sistemy, Trudy Moskovskogo Ordena Lenina Aviatsionnogo Instituta imeni Sergo Ordzhonikidze, Vol 2, No 215, 1970, signed to press 14 October 1970, Machine Building Press, Moscow.

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UDC 621.7.051:621.396.6.001

CALCULATION AND DESIGN OF DIODE SWITCHING DEVICES IN THE DECIMETER RANGE

Engineers G. F. Vasil'yev and
A. Ye. Zakimenko and
Candidate of Engineering Sciences
N. Ginzburg

pages 265-284

This work is devoted to the investigation of discrete switching devices in the microwave range, controlled by p—n-diodes. A circuit diagram of point-contact and diffusion semiconductor diodes which is valid in the microwave range is presented in Figure 1 [reference 1], where the p—n-junction is represented by the variable capacitance C_p, the magnitude of which may vary from tenths of picofarad at negative biases to tens or even hundreds of picofarads with positive biases. An active resistance is connected in parallel to the capacitance of the p—n-junction, and the magnitude of this resistance also varies strongly under the effect of the control voltage. However, in the decimeter and centimeter wave ranges, the capacitative reactance of the p—n-junction is much less than the active resistance and the latter may be ignored in the analysis of the switching circuits. The inductivity of the cat whisker L and the spreading resistance r are connected in series with the capacitance of the p—n-junction. The capacitance of the socket and the leads C_{pl} [$C_{pl}=C_p=C_{socket}$] is connected in parallel to the leads. The magnitude of the last three parameters does not vary under the effect of the control voltage.

Figure 1. Circuit diagram of the diode. (1) C_p.

The problem of obtaining the optimum parameters of diode microwave switches was solved for the first time in reference [2], where it was demonstrated that the optimum parameters of switching devices controlled by the capacitance of a p—n-junction are realized in circuits in which two resonances correspond to two states of the switch: a parallel resonance to one state, and a series resonance to the other. The input resistance of the on-off switch in the resonance frequency is purely active. It is great in one state and small in the

...ne standing wave ratios of all these models does not exceed 1.15 in the ...resent frequency band for both states of the phase inverter.

On the basis of the models described, two models of multi-position phase inverters with a discrete value of $\pi/8$ were assembled. One of these models was optimized by the delay method, and the other by phase. Each multi-position phase inverter consisted of four cascade-connected elements. In all positions of the phase inverter, the deviation of the experimental points from ideal curves does not exceed eight degrees. The maximum value of attenuation in the use of diodes of type IA504 reaches 1.1 decibel, but, however, on the average the losses amount to about 0.8 decibel. The maximum standing wave ratio reaches 1.5. However, this figure may apparently be improved if the joints and junctions between the elementary phase inverters are made more carefully.

CONCLUSIONS

For construction of diode switching devices in the decimeter range, it has turned out to be necessary to use on-off switches in the circuits, together with additional reactive elements controlled by diodes. The theoretical and experimental investigation of a diode on-off switch circuit containing a distributed inductivity has confirmed the assumption that such a circuit opens new opportunities for controlling the properties of an on-off switch. Because of the fact that one of the additional elements is distributed, the possibility of optimization of the on-off switch appears, with a consideration of its use in a more complex device.

Analysis of the characteristics of such devices has demonstrated that optimization of changeover switches with respect to losses is possible, and optimization of phase inverters with respect to losses or phase frequency characteristics. In all these cases, optimization is provided by selection of additional reactive elements of the circuit of the diode on-off switch.

Analysis of the requirements imposed upon circuit elements of an on-off switch has made it possible to develop methods of engineering calculation of such circuits with respect to the selected optimization conditions. In accordance with these calculation methods, experimental models of diode switching devices were designed. The parameters of the devices measured satisfactorily coincident with the calculated parameters, and turned out to be quite high. For example, for a diode changeover switch with one input and two outputs, assembled from IA501 diodes, and optimized by the loss method, losses in the open arm turned out to be of the order of 0.1 decibel, and the decoupling of the blocked arm above 45 decibels. For phase inverters optimized with respect to the minimum of phase distortions in the frequency band, the deviation of the phase from ideal turned out to be not more than two degrees in a ten-percent frequency band. In this case, losses in the two states of the phase inverter differed from the calculated values by not more than 0.2 decibels, and in the worst case did not exceed 0.8 decibel. At the same time, the phase error in the same frequency band, for a phase inverter optimized with respect to losses, reaches 20 degrees, and losses in both states

ount to about 0.15 decibel (with a calculated value of 0.14 decibel). On the basis of the approach developed in this work, these switches were developed which have found application in radioastronomical installations operating in the decimeter band at the Serpukhov radiotelescope at the State Astronomical Institute imeni P. K. Shternberg and the Main Astrophysical Observatory of the USSR Academy of Sciences (at Pulkovo).

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5. Linii peredachi santimetrovykh voln (Centimeter-wave transmission lines), edited by G. A. Remez, Izd-vo "Sovetskoye radio", 1951, vol. 1, p. 172.

6. Feid'shteyn, A. L., Yavich, L. R., and Smirnov, V. P., Spravochnik po elementam volnovodnoy tekhniki (Handbook on the elements of waveguide engineering, Izd-vo "Sovetskoye radio", 1967.

UDC 621.396.61.029.64

USSR

VASIL'YEV, G. F., YEVDOKIMENKO, YU. A., GINZBURG, V. N.

"Calculation and Design of Decimeter-Range Diode Commutation Devices"

Tr. Mosk. aviats. in-ta (Works of Moscow Aviation Institute), 197, vyp. 215, pp 265-284 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D327)

Translation: Some circuits of decimeter range commutation devices are analyzed in which resonance diode breakers with distributed inductance are used. It is demonstrated that connecting the distributed reactive elements (inductive loop) to the p-n diode circuit permits realization of the optimal parameters of the diode breaker on low frequencies far from the natural resonance frequency of the commutation diode, and the parameters of the auxiliary inductance can be selected to optimize the switches and phase converters constructed on the basis of these breakers. A procedure is presented for engineering calculation of the diode breakers and more complex commutation devices. Descriptions of models of the decimeter wave range switches and phase converters and their experimental characteristics are presented. The bibliography has 6 entries.

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USSR UDC: 51

YEVDOKIMOV, A. G., SHEKHOVTSOV, B. G.

"Linear Problem of Synthesizing a System of Regulating Elements in a Mine Ventilating Network Which is Optimum With Respect to Energy Expenditures"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch--tekhn. sb. (Instruments and Systems of Automation. Republic Interdepartmental Thematic Scientific and Technical Collection), 1972, vyp. 21, pp 138-153 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V593)

Translation: A general algorithm for solving the linear problem is considered which is based on goal-directed sorting of trees of a PERT graph. A compact computational procedure is proposed. Authors' abstract.

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USSR UDC: 51

YEVDOKIMOV, A. G. and SHEKHOVTSOV, B. G.

"Linear Problem of Synthesizing a Control System of Optimal Power Consumption in a Mineshaft Ventilating Grid"

Pribory i sistemy avtomatiki. Resp. Mezhved. temat. nauch.-tekhn. sb. (Automation Instruments and Systems, Republic Interdepartmental Topics, Scientific-Technical Collection) No 21, 1972, pp 138-153 (from RZh--Matematika, No 8, 1972, Abstract No 8V593)

Translation: A general algorithm is considered for solving a linear problem based on a purposeful selection of trees in the grid graph. A compact calculation procedure is presented. Authors' abstract

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UDC 577.4

USSR

YEVDOKIMOV, A. G., SHEKHOVTSOV, B. G., GUBAREV, S. I.

"A Problem of Mathematical Programming for Linear Restrictions"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Instruments and Automation Systems. Republic Interdepartmental Thematic Scientific and Technical Collection), 1972, vyp. 21, pp 51-55 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V496)

Translation: A study was made of the necessary and sufficient conditions for the local minimum points of the problem of mathematical programming with linear restrictions. Analytical expressions of the criteria for selecting the direction and magnitude of the admissible stepsize of the differential algorithm for its solution are presented.

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4/

UDC: 550.834

USSR

BALASHKAND, M. I., FILIPPOV, N. G., YEFIMENKO, M. D., CHEN, O. L., MAYOROV, V. V., KRASNOPOL'SKIY, A. D., SOLODILOV, L. N., YEVDOKIMOV, G. S., Ramenskoye Department of the All-Union Scientific Research Institute of Geophysical Methods of Prospecting

"A Device for Emission of a Seismic Signal"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8, Mar 72, Author's Certificate No 330407, Division G, filed 20 Jan 70, published 24 Feb 72, p 142

Translation: This Author's Certificate introduces: 1. A device for emission of a seismic signal. The device contains compressed-air and liquid-fuel supply systems and a pneumatic chamber with movable piston which opens and closes the outlet port of the chamber. As a distinguishing feature of the patent, the compressed-air discharge energy is increased and the heat and force load on the chamber is reduced by fitting the movable piston with atomizers which break up the fuel in the compressed air during gas exhaust and by attaching a device for ignition of the fuel mixture to the chamber housing. 2. A modification of this device distinguished by the fact that

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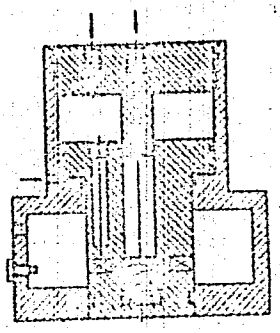
USSR

JALASHKAND, M. I. et al., USSR Author's Certificate No 330407

the movable piston has a channel filled with fuel and communicating with the atomizer through a check valve, and the cover of the chamber has a rod which enters the channel of the piston and feeds fuel into it through the chack valve. 3. A modification of this device distinguished by the fact that the attachment for igniting the fuel mixture is made in the form of a wedge.



2/2

USSR UDC: 621.316.727

YEVDOKIMOV, M. S., SKRIPNIK, Yu. A., DREMLYUGA, V. Ya., YANOVSKAYA, I. V., Institute of Electrodynamics, Academy of Sciences of the Ukrainian SSR

"A Device for Measuring the Nonlinearity of Phase Characteristics in Circular Phase Shifters"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26, 1970, Soviet Patent No 278871, Class 21, filed 21 April 1969, p 65

Abstract: This Author's Certificate introduces a device for measuring the nonlinearity of phase characteristics in circular phase shifters. The device contains resonance frequency multipliers, amplitude clippers, pulse shapers, a symmetric flip-flop with separate inputs and an output null indicator, all in conversion channels. As a distinguishing feature of the patent, precision is improved by connecting the phase shifter to be checked and the auxiliary phase shifter to the input of one of the channels of the phase measurement circuit through an automatic switch controlled by the voltage from a low frequency commutation oscillator. The output null indicator is connected to the output of the symmetric flip-flop through a low frequency filter, an AC amplifier, and a phase sensitive rectifier controlled by the voltage from the same commutation oscillator.

UDC 621.791.756:621.747.58

USSR

YAKOVLEV, V. F., KOVALKIN, P. I., YEVDOKIMOV, N. I., KOZULIN, M. G., and SUSHCHUK-SLYUSARENKO, I. I.

"Electroslag Welding of Steel Casting Defects"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 70, p 72

Abstract: A description is given of a technique of electroslag welding and building-up of steel casting defects. Using a water-cooled copper nonconsumable electrode, a slag bath is drawn which is then heated for a period of 15-60 min. During this time, the edges to be welded are heated to 800-1200°C, and under the effect of the heated slag the surface of the aperture is chemically cleaned. For welding the defect, the nonconsumable electrode is replaced by a spatial one which is consumable along the shape of the profile of the welded aperture. The direction of the fed welding wires plays an important role in the initial stage of fusion of the deposited metal.

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1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CLINICAL FEATURES SPECIFIC TO HONG KONG A SUB2 INFLUENZA IN 1969 -U-

AUTHOR-(05)-ZLYONIKOV, D.M., BEIYAYEVA, N.M., ROMANOV, YU.A., YEVDOKIMOV, N.M., CHEPIK, YE.B.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 5, PP 97-102

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INFLUENZA VIRUS, SEROLOGIC TEST, GAMMA GLOBULIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0528 STEP NO--UR/0497/70/048/005/0097/0102

CIRC ACCESSION NO--AP0124224
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124224

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CLINICAL STUDY OF 684 PATIENTS IWTH SEROLOGICALLY CONFIRMED DIAGNOSIS DURING THE EPIDEMICS OF HONG KONG S SUB2 INFLUENZA IN LENINGRAD REVEALED NO ESSENTIAL DIFFERENCES IN THE COURSE OF A SUB2 INFLUENZA OUTBREAKS OF THE PRECEEDING YEARS. THE 1969 HONG KONG A SUB2 INFLUENZA OUTBREAK WAS CHARACTERIZED BY MODERATE INTOXICATION AND CATARRHAL SYMPTOMS. THE CLINICAL PICTURE OF INFLUENZA WAS CHARACTERIZED BY A PECULIARITY OF A NUMBER OF CLINICAL SYMPTOMS. SPECIFIC ANTI INFLUENZAL AGENST (ANTI INFLUENZAL GAMMA GLOBULIN, POLYGLOBULIN, ANTI INFLUENZAL SERUM) IN THERI EARLY EMPLOYMENT PRODUCED A DISTINCT THERAPEUTIC EFFECT. FACILITY: VSESOYUZNYY NAUCHNO ISSLEDOVATEL'SKIY INSTITUT GRIPPA MINISTERSTVA ZDRAVOOKHRANENIYA SSSR, KLINICHESKAYA INFEKTSIONNAYA BOL'NITSA IM. S. P. BOTKINA I 32 YA POLIKLINIKA ZHDANOVSKOGO RAYONA.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--HEMOSTASIS INDICES IN RADIUM THERAPY OF LUNG CANCER -U-

AUTHOR-(03)-STRASHININ, A.I., YEVDOKIMOV, N.M., ZLYDNIKOV, D.M.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 3, PP 6-8

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIUM, MEDICAL NUCLEAR APPLICATION, LUNG, CANCER, FIBRINOGEN, THROMBOCYTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1695 STEP NO--UR/0241/70/015/003/0006/0008

CIRC ACCESSION NO--AP0101750

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203710009-7"

2/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101750

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNDER STUDY WAS THE CLINICAL VALUE OF HEMOSTASIS INDICES FOR DETERMINING THE EFFECTIVENESS OF RADIUM THERAPY IN 39 PATIENTS WITH CANCER OF THE LUNG. IN THE GROUP OF PATIENTS WITH SATISFACTORY IMMEDIATE RESULT OF RADIUM THERAPY THE FOLLOWING WAS NOTED: REDUCTION OF FIBRINOGEN CONCENTRATION, INTENSIFICATION OF THE FIBRINOLYTIC ACTIVITY, DECREASE OF THE QUANTITY OF THROMBOCYTES WITH NORMALIZATION OF THE THROMBOCYTE FORMULA; NO SUCH CHANGES WERE OBSERVED IN THE GROUP OF PATIENTS WITH INEFFECTIVE RADIUM THERAPY. SUBSEQUENT CLINICAL OBSERVATIONS OVER PATIENTS UNDERGOING RADIUM THERAPY HAVE SHOWN THAT IN PATIENTS WITH A SATISFACTORY EFFECTIVENESS OF RADIUM TREATMENT THE AVERAGE SURVIVAL COMPRISED 19 AND ONE HALF MONTHS, WHEREAS IN PATIENTS WITH AN UNSATISFACTORY EFFECT, 7 AND ONE HALF MONTHS.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203710009-7"

USSR

UDC 539.124.17

VOROB'YEV, A. A., YEVDOKIMOV, O. B., and RYZHAKOVA, N. K., NII /Scientific Research Institute/, Tomsk Polytechnic Institute imeni S. M. Kirov

"Some General Questions in Fast Electron Transfer. IV. Transfer in Matter in an Electric Field"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 1, 1973, pp 23-27

Abstract: The article uses the segment model as the basis for a general method for calculating the passage of electrons in a substance in approximation of continuous moderation in a homogeneous electric field. The criterion of a comparatively weak field is derived for determining the Green function for the trajectory segment. A system of recurrent relations is obtained for the momenta of the distribution function. The principal properties of special functions occurring in theory are considered. The problem of electron energy degradation, with allowance for electron multiplication, is solved for an evaluation of the upper limit of the role of secondary electrons.

1/1

USSR

VOROB'YEV, A. A., YEVDOKIMOV, O. B., and TUBALOV, N. P., Tomsk Polytechnical Institute imeni S. M. Kirov

"Effect of Overcharge of a Dielectric Charge by an Electron Beam"

Leningrad, Fizika Tverdogo Tela, No 12, Dec 71, pp 3691-3692

Abstract: It is shown for the first time that a change in the sign of the effective space charge can occur in plexiglass in the course of time. It is noted that it was known that a negative space charge of thermally insulated electrons is produced upon the irradiation of high-ohmic dielectrics by fast electrons, and this appears in the development of discharge diagrams and is applied in studying the electrical properties of dielectrics. Plexiglass discs 4.5 mm thick and coated with 5-micron aluminum foil were irradiated by 0.8-1.2 Mev electrons at a current density of 0.5 μamp/cm^2 for 15-20 sec, and then the space charge was tested using the effect of an electric field on the passage of beta particles through a dielectric. The charge samples were periodically irradiated by beta particles from a strontium-iridium source, and the number of passing beta particles was measured. The figure is given showing the relative change in the number of passing beta particles due to the electric field as a function of time

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203710009-7"

VOROB'YEV, A. A., et al., Fizika Tverdogo Tela, No 12, Dec 71, pp 3691-3692

after irradiation. The figure shows that the change in sign of the effective space charge is observed if the maximum in the distribution of the stopped electrons shifts to one of the surfaces of the plate. In this case a positive space charge arises in the region of the dielectric not occupied by the negative space charge due to injection from the surface. Overcharge is attributed to leakage of the negative space charge more rapidly than leakage of the positive space charge. The observed overcharge effect is related to the electric state of the plexiglass, just as in polystyrene, which, as distinct from plexiglass, does not yield an electret state and overcharge is not observed.

USSR

UDC 624.131.537:626.82.06-15

YEVDOKIMOV, P. D., Professor, Doctor of Technical Sciences, APTEKAR', L. D., Candidate of Technical Sciences and KASHKAROV, P. N., LIPOVETSKAYA, T. F., and KONDRAT'YEVA, K. B., Engineers

"Experimental Studies to Determine the Stability of the Building of Nizhne-Kamskaya Hydroelectric Power Station"

Gidrotekhnicheskoye Stroitel'stvo, No 3, 1972, pp 11-15.

Abstract: Results are reported from field tests of the shear strength of the foundation of the Nizhne-Kamskaya hydraulic electric power station power house. Experiments on shear of stamps performed in the construction trench at the level of the structure were used as a basis for the design characteristics of foundation soil strength for the power house and to establish possible types of deformation of the fundation upon shifting of the structure under the engineering and geological conditions of the site.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203710009-7"

USSR UDC: 621.372.061

YEVDOKIMOV, P. I.

"Algorithm and Circuit for an Ideal Frequency Detector"

V sb. Metody pomekhoustoychivogo priyema ChM i FM (Methods of Interference--Free FM and PM Reception--collection of works), Moscow, "Sov. radio", 1970, pp 182-192 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A140)

Translation: Conclusions of the theory of optimum radio reception are taken as a basis for a new interpretation of the operation of a frequency detector, and it is shown that the classical circuits of frequency-phase detectors are autocorrelators. In this regard, the reason for nonlinearity in the characteristics of frequency-phase detectors is explained, and it is shown that the frequency detector has a characteristic with zero nonlinearity in the case of conversion of a harmonic signal to a meander signal and processing on an autocorrelator connected in an AND circuit. In conclusion, the structure of an ideal detector is given together with the results of an experimental check of one modification of such a circuit. Resumé.

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Instruments and Equipment

USSR

UDC 612.822.3

AVELEV, O. V., and VEZOKINOV, S. A., Laboratory of the Physiology of Innate Reflex Mechanisms, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR

"Adaptation of the M-297 Respirator for Use in Microelectrode Studies"

Leningrad, Fiziologicheskiy Zhurnal SSR imeni I. M. Sechenov, No 1 1970, pp 124-126

Abstract: The M-297 respirator, an apparatus normally used for newborn infants, is well suited for physiological experiments, but the range of possible frequencies at which air can be pumped is limited: 15, 20, 25 or 30 inhalations a minute. One of the problems in experiments involving the use of microelectrodes for intracellular derivation of bioelectric potentials from individual neurons of the spinal cord arises from the respiratory movements of the thorax. The amplitude of these movements can be reduced by decreasing the volume of air supplied while increasing the rate at which it is pumped. An adapter was developed that can be fitted to the M-297 (or any other apparatus that has a crank drive for transforming ro-

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USSR

AVELEV, D. V., et al., Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, No 1, 1970, pp 124-126

tatory into reciprocal motion), whereby the frequency of air pumping is increased threefold, permitting 45, 60, 75, or 90 inhalations a minute. The improve M-297 greatly improves the conditions for intracellular derivation of bioelectric potentials and stabilizes the position of the microelectrode in the cell.

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USSR

UDC 778.37

VANYUKOV, M. P., YEVDOKIMOV, S. V., NILOV, YE. V., and CHERTKOV, A. A.

"A Laser With Periodic Modulation of Quality for High-Speed Filming"

Moscow, Kvantovaya Elektronika, No 3, 1971, pp 108-110

Abstract: This brief article examines a laser which emits individual series of light pulses at a wavelength of 530 nm at a repetition frequency of the pulse train of 15 kHz. The authors examine the design of a quality modulator of a master oscillator operating on neodymium glass. They describe the theoretical circuit of the radiation converter and cite the results of testing the oscillator. Figure 1 shows the master oscillator operating at a wavelength of 1060 nm and describes the operating elements. The quality modulator is an optico-mechanical system consisting of rotating rectangular prisms. The radiation frequency converter operates in visible radiation, since the photographic film used has a comparatively low sensitivity in the infrared band. The supply unit consists of 20 condensors, 100 μf each, and 20 inductance coils of 40 μh. This supply source ensures laser operation at a repetition frequency of 1/60 Hz. The required power does not exceed 500 w. The authors found that the radiation has the form of ordinary gigantic pulses from the laser. Their duration is 40-50 nsec and the scatter in amplitudes of the

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USSR

VANYUKOV, M. P., et al., Kvantovaya Elektronika, No 3, 1971, pp 108-110

pulses does not exceed 20-25% for the first 10-12 pulses. With a pumping energy of 2000 J the total energy of the series of 30 pulses comprised 16 J at a wavelength of 1060 nm. After converting the radiation to the second harmonic, the total energy of the series of light pulses was 2.1 J at a wavelength of 530 nm. The authors mention that the frequency of pulse repetition obtained in the series is not maximal for equipment of this type. With increase in frequency, the efficiency of such an oscillator is improved and tends toward the value of the efficiency in a mode of free oscillation. The article contains 2 figures and a bibliography of 6 entries.

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USSR UDC 621.762.4.001

MAYDICH, YU. V., LAVRINENKO, I. A., YEVDOKIMOV, V. A., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Study of Compacting During Liquid-Phase Sintering Under Pressure In the W-Cu System"

Kiev, Poroshkovaya Metallurgiya, No 1, Jan 74, pp 34-39

Abstract: Results are presented from studies of liquid-phase sintering under pressure (LPSP) and the compacting processes which take place at high liquid phase content -- 30-60 vol % in the W-Cu system. Data from the tests showed the same relationship of effect of applied pressure on sample shrinkage (compaction) for different starting granularities, volume content of liquid phase, and sintering temperature. This relationship was that the finer the granularity of the powders, the higher the liquid-phase content, and the higher the sintering temperature, the greater is the degree of compaction. A rise in the degree of solid-phase wettability by the liquid phase promotes improved penetration of the liquid into the particle boundaries, thus improving shrinkage and compaction. It was established that shrinkage and compaction in LPSP are independent or depend very little on solid-phase particle size in systems where there is a notable absence of component
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USSR

NAYDICH, YU. V., et al., Poroshkovaya Metallurgiya, No 1, Jan 74, pp 34-39

solubility and an inelastic solid-phase constituent. A specified plasticity of the solid phase and its incomplete wetting by the liquid phase leads to a certain decrease of shrinkage with increased particle size, and this effect is increased with increased pressure. The obtained results provide the fundamentals for selecting optimum modes which will ensure complete compaction of the sintered composites. Three figures, one table, eight bibliographic references.

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1/3 029 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--KINETICS OF THE LOSS OF SILVER ATOMS ADSORBED ON SILICA GEL -U-

AUTHOR-(04)-PCPOVICH, G.M., LUNINA, YE.V., GOLUBEV, V.B., YEVDOKIMOV, V.B.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 517-20

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--SILVER NITRATE, SILICA GEL, CHEMICAL KINETICS, EPR SPECTRUM, ADSORPTION, IRRADIATION, ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1237 STEP NO--UR/0076/70/044/002/0517/0520

CIRC ACCESSION NO--AP0123199

UNCLASSIFIED

2/3 029 UNCLASSIFIED

CIRC ACCESSION NO--AP0123199 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SAMPLES PREPD. BY SHAKING CARRIER WITH AGNO SUB3 SOLN. IN WATER FOR 3 HR, WERE WASHED WITH DISTD. WATER, DRIED AND IRRADIATED BY X OR GAMMA RAYS, AT MINUS 196DEGREES. SYNTHETIC SILICA GEL CORRESPONDING TO A SURFACE OF 660 M PRIME2-G AND ALUMINO SILICATE CONTG. AL SUB2 O SUB3 (12 AND 25PERCENT) CORRESPONDING TO THE SURFACES OF 400 AND 350 M PRIME2-G WERE USED AS CARRIERS. INDUSTRIAL SILICA GEL SAMPLES WERE ALSO USED. THE TEMP. WAS VARIED BY CHANGING THE TEMP. OF N SUB2 FLOWING THROUGH THE RESONATOR. EPR SPECTRA OF STABILIZED AG ATOMS ON THE SURFACE SHOWED 2 DOUBLETS OF ISOTOPES PRIME107 AG AND PRIME109 AG. CONSTS. OF HYPERFINE SPLITTING DECREASED IN THE CASE OF IRRADIATED SPECIMENS FROZEN IN SOLN. DOUBLETS WERE ALSO FOUND DURING IRRADN. OF AGNO SUB3 SOLN. HYPERFINE SPLITTING CONSTS. DEPEND UPON TEMP.; AT MINUS 170DEGREES, THEY DECREASED TO SIMILAR TO 40 OE. SPLITTING CONSTS. OF ATOMS STABILIZED ON THE SURFACE WERE INDEPENDENT OF TEMP. PERCENT RELATIVE CHANGE IN SPLITTING CONSTS. IS EXPRESSED AS DELTA(DELTAV)-DELTAV SUBFREE WHERE DELTA(DELTAV) EQUALS DELTAV MINUS DELTAV SUBFREE. DELTAV AND DELTAV SUBFREE ARE SPLITTING CONSTS. OF STABILIZED AND FREE ATOMS OF THE ISOTOPES BEING STUDIED. CHARACTERISTIC CURVES FOR THE LOSS OF AG ATOMS AT MINUS 140DEGREES ADSORBED ON SILICA GEL AND STABILIZED IN FROZEN SOLN. ARE GIVEN. THE EFFECTS OF TEMP. AND RATE OF MELTING ARE CONSIDERED. IT IS ASSUMED THAT DURING IRRADIATION, ENERGIZED TRAPS ARE FORMED IN THE CARRIER. DURING HEATING OF THE SPECIMEN, SOME OF THE ELECTRONS ARE SET FREE WHICH ARE RESPONSIBLE FOR THE REDN. OF SOME OF THE AG PRIMEPOSITIVE IONS TO AG ATOMS.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203710009-7"

3/3 029 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0123199
ABSTRACT/EXTRACT--FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 681.325.5

PUKHOV, G. YE., Academician of the Academy of Sciences Ukrainian SSR, and YEVDOKIMOV, V. F., Institute of Electrodynamics, Academy of Sciences Ukrainian SSR, Kiev

"The Use of Digital Nonalgorithmic Machines for the Modeling of Differential Equations"

Moscow, Doklady Akademii Nauk SSSR, Vol 208, No 3, 1973, pp 570-572

Abstract: The article considers one of the possible uses of digital nonalgorithmic machines for solving systems of differential equations which as matrices have the form

$$\frac{dX}{dt} + A(X)X = F. \qquad (1)$$

Descriptions are given of a device for obtaining the sum of the paired products

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USSR

PUKHOV, G. YE., and YEVDOKIMOV, V. F., Doklady Akademii Nauk SSSR, Vol 208, No 3, 1973, pp 570-572

$$y = a_1x_1 + a_2x_2 + \ldots + a_ix_i + \ldots + a_nx_n \qquad (2)$$

and a device for solving a system of three equations of form (1), whose construction follows the pattern of a matrix analog model designed to solve the same equations.

The technique of solving differential equations by means of digital nonalgorithmic machines is rather general, since any system of differential equations, as well as individual high-order equations, reduces to form (1). Sometimes, however, particularly in the modeling of automatic control systems, the need arises for the so-called structural realization of systems of differential equations. In this case it is necessary to have a set of decision elements for the digital nonalgorithmic machines realizing the individual operations and to interconnect them according to the structure of

USSR

PUKHOV, G. YE., and YEVDOKIMOV, V. F., Doklady Akademii Nauk SSSR, Vol 208, No 3, 1973, pp 570-572

the modeling system. The process of preparing problems for solution on the digital nonalgorithmic machines is the same as in analog computer technology. The use of the digital nonalgorithmic machines to solve differential equations substantially expands the frequency range of obtainable results as compared to existing digital computers and increases precision as compared to analog computers.

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USSR

UDC: 681.325.5

PUKHOV, G. Ye., Academician of the Ukrainian Academy of Sciences, and YEVDOKIMOV, V. F.

"A Possible Principle in the Construction of Digital Computers"

Moscow, Doklady Akademii Nauk SSSR, 11 January 1973, pp 287-290

Abstract: The accuracy and speed of digital computers are roughly proportional to the volume of the equipment required for the computations; in analog computers, the accuracy is limited by the potentials of the computing elements and the speed is practically independent of the volume of equipment. This paper investigates the possibilities of constructing machines in which the equipment volume is independent of the speed but increases with increasing accuracy as in digital devices. There is thus the possibility of developing machines with the accuracy of digital and the speed of analog computers, which situation is considered a practical impossibility in computer practice. It can be attained by using the nonalgorithmic principle, widely used in analog machines, in digital equipment. The authors refer to machines using this principle as digital non-algorithmic machines, and they indicate three possible directions in which they may develop.

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USSR BOOK 352

UDC 517.4.001.57

VERLAN', A. F., and YEVDOKIMOV, V. F.

Elektronnoye Modelirovaniye Peredatochnykh Funktsiy (Electronic Simulation of Transfer Functions), Kiev, "Tekhnika," 1971, 232 pp, illus, biblio 103 titles, 3,700 copies printed.

Translation of Annotation:

The book deals with problems involving the development and use of methods of electronic simulation of transfer functions. Basic data are presented from the mathematical apparatus of transfer functions; hardware and software for simulating fractional-rational transfer functions are described as well as a number of procedures for deriving and modeling approximating expressions for irrational and transcendental transfer functions. Consideration is given to applications of the described procedures for studying objects and systems with distributed parameters and for solving certain partial differential, integral, and transcendental equations. The book is intended for specialists in the area of analog computer technology and automatic control, scientific workers and engineers engaged in the study of the dynamics of various systems, and also for students majoring in related fields.

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JPRS 57208
6 May 73

YEVDOKIMOV, V. I.

V-7. OBTAINING BORON PHOSPHIDES FROM THE GAS PHASE

[Article by B. A. Savel'yev, V. N. Doronin, V. A. Kreyev, V. I. Yevdokimov, Moscow; Novosibirsk, VII Simpozium po Protsessam Rosta i Polyprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 58]

On the basis of the results of the thermodynamic analysis of the reactions of joint reduction of boron and phosphorus halogenides and also the experimental study of the processes of reducing boron tribromide and phosphorus trichloride with hydrogen, an estimate was made of the conditions of obtaining boron phosphides from the gas phase.

A study was made of the dependence of the deposition rate of the boron phosphides on the temperature (600-1400 degrees) and the ratio of the phosphorus trichloride to boron tribromide from 1 to 5 (with a constant hydrogen flow rate and feed rate of the reaction mixture).

The conditions of obtaining monocrystalline films of boron phosphides with deposition on silicon are defined.

Some electrophysical properties of the boron phosphide films were investigated.

1/2 044 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DEPENDENCE OF THE LIFETIME OF OPTICAL PHONONS IN GALLIUM ARSENIDE ON THE HOLE AND ELECTRON CONCENTRATION -U-

AUTHOR-(03)-EVDOKIMOV, V.M., KUKHARSKIY, A.A., SUBASHIYEV, V.K.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA I TEKHNIKA POLUPROVODNIKOV, VOL. 4, MAR. 1970, P. 573-576

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--OPTIC PROPERTY, PHONON, GALLIUM ARSENIDE, ELECTRON DENSITY, IR SPECTRUM, SEMICONDUCTOR MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0994 STEP NO--UR/0449/70/004/000/0573/0576

CIRC ACCESSION NO--AP0115015

UNCLASSIFIED

2/2 044 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0115015

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYTICAL AND EXPERIMENTAL INVESTIGATION OF THE IR REFLECTION SPECTRA OF SEMICONDUCTORS BEYOUND THE INTRINSIC ABSORPTION EDGE, IN THE CASE WHERE THE PLASMA FREQUENCY IS CLOSE TO FREQUENCY OF THE OPTICAL PHONONS. IT IS SHOWN THAT IN ORDER TO OBTAIN INFORMATION ON THE INTERACTION BETWEEN THE PHONONS AND THE FREE CHARGE CARRIERS, IT IS ESSENTIAL TO TAKE INTO ACCOUNT THE DAMPING OF BOTH THE ELECTRON AND PHONON SYSTEMS. A PHENOMENOLOGICAL LIFETIME OF OPTICAL PHONONS (DEFINED AS A QUANTITY RECIPROCAL OF THE DAMPING IN THE OSCILLATOR EQUATION DESCRIBING LATTICE VIBRATIONS) IS INTRODUCED WHICH CHARACTERIZES THE DAMPING OF THE PHONON SYSTEM. IT IS FOUND THAT THE PHONON LIFETIME DECREASES MONOTONICALLY WITH INCREASING NUMBER OF HOLES, WHICH AN INCREASE IN THE ELECTRON CONCENTRATION LEADS TO AN ABRUPT INCREASE IN THE PHONON LIFETIME. THIS UNEXPECTED RESULTS IS ATTRIBUTED TO THE DIFFERENT SCREENING ACTION OF ELECTRONS AND HOLES.

FACILITY: AKADEMIIA NAUK SSSR, INSTITUT POLUPROVODNIKOV, LENINGRAD, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--THE DIAGNOSIS OF TRAUMATIC INTESTINAL INTRAMURAL HEMATOMAS -U-

AUTHOR-(02)-YEVDOKIMOV, V.N., FIDRUS, YE.I.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 5, PP 94-98

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SMALL INTESTINE, TRAUMATOLOGY, RADIOGRAPHY, DIANOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0581 STEP NO--UR/0589/70/104/005/0094/0098

CIRC ACCESSION NO--AP0108796

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0108796
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OBSERVATIONS OVER 12 PATIENTS WITH TRAUMATIC INTRAMURAL HEMATOMAS OF THE BOWEL ARE SUMMARIZED. CONTRAST X RAY INVESTIGATION OF THE BOWEL IS FELT TO BE OF GREAT IMPORTANCE FOR THE DIAGNOSIS. SURGICAL POLICY IS VARIED DEPENDING ON THE CHARACTER OF CLINICORDENTGENOLOGICAL CHANGES. INDICATIONS TO URGENT SURGICAL INTERVENTION IS SUCH AN AFFECTION ARE DESCRIBED. FACILITY: RENTGENOVSKOGO OTD. AND KHIRURGICHESKOY KLINIKI MOSKOVSKOGO N I INSTITUTA IM. N. V. SKLIFOSOVSKOGO.

UNCLASSIFIED

USSR

UDC 629.78:621.398

KHODAREV, Yu. K., YEVDOKIMOV, V. P., POKRAS, V. M.

"Statistical Analysis of Information from Long Range Space Vehicles"

Apparatura dlya Kosmich. Issled. [Equipment for Space Studies -- Collection of Works], Moscow, Nauka Press, 1972, pp 239-245, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 9, 1972, Abstract No 9.41.227, from the Resume).

Translation: The statistical characteristics of telemetry information from the "Zond-1" and "Venera-4" space probes are analyzed. The distribution of the number of active channels is calculated using an excess of the channel value above a certain threshold generated by a zero-order predictor as a criterion for channel activity. The distributions are calculated for various values of predictor threshold and for several periods of interrogation of the spacecraft sensors. Data are produced on slight changes in the mean number of active channels during communications sessions at widely differing flight times. The distribution of relative activity of channel groups is calculated. The statistical characteristics studied are used to determine the compression factor for two possible data compression systems. 6 Figures; 2 Tables; 2 Biblio. Refs.

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Burn Studies

USSR

IVANOVA, N. P.; YEVDOKIMOV, Ye. A.; SHEKHTER, A. B.; ISTRANOV, L. P.; RUDENKO, T. G.; SYCHENIKOV, I. A.; Central Scientific Research Laboratory imeni S. I. Chechulin, First Moscow Medical Institute imeni I. M. Sechenov, and Central Institute of Traumatology and Orthopedics.

"Application of Collagen Sponge in the Treatment of Burns"

Moscow, Novoye v Diagnostike, Lechenii, Profilaktike Vazhneyshikh Zabolevaniy i Metodakh Issledovaniya (News in Diagnosis, Treatment, and Prophylaxis of the Most Important Diseases and Methods of Investigation), Ministerstvo Zdravookhraneniya SSSR, 1971, 128 pp, pp 51-52

Abstract: Notwithstanding the large variety of materials and drugs used for the dressing and treatment of burns, to this date there is no generally accepted method of treatment. During the past few years information has appeared concerning the extensive utilization of collagen polymer preparations for the treatment of burns, trophic ulcers, scalp wounds, and so on,

IVANOVA, N. P., et al, Novoye v Diagnostike, Lechenii, Profilaktike Vazhneyshikh Zabolevaniy i Metodakh Issledovaniya, 1971, 128 pp, pp 51-52

which is absorbed by the organism and has a positive effect on the regenerative processes of the lesion.

The porous collagen sponges are hemostatically effective, and by their hygroscopic and structural properties securely protect the injured surface from the effects of the external environment, considerably reduce plasma loss, and contribute to the growth of granulation tissue and the rapid healing of the lesions. In addition, the collagen can be permeated with different medicinal substances (antibiotics, antiseptics, hormones, vitamins, substances stimulating the growth of connective tissue, and others) which are released by lysis of the collagen sponge.

Taking into consideration the positive properties of the collagen preparation, researchers at the Central Scientific Research Institute of Traumatology and Orthopedics Burn Section applied

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USSR

IVANOVA, N. P., et al, Novoye v Diagnostike, Lechenii, Profilaktike Vazhneyshikh Zabolevaniy i Metodakh Issledovaniya, 1971, 128 pp, pp 51-52

a collagen sponge 0.5-0.8 cm thick and filled with boric acid, hydrocortisone, and furacillin to 20 patients with fresh burns and large granulation surfaces.

For the treatment of second and third degree burns, sponges corresponding in size to the injured areas were placed on the processed burned surfaces. Aseptic dressings were then applied. The dressings were changed within 2-3 days, and subsequently as required by the condition of the burned surface and the rapidity of lysis of the sponges. When applied to moist wound surfaces, the collagen sponges closely adhered to the wound, absorbing the lesion exudate. When exudation was copious, the sponges were absorbed by the second or third days.

The positive aspects of the application of collagen sponge are its rapid and painless covering of the burned surfaces, and the possibility of permeating the sponge with different medicinal substances which are able to exert a direct local effect on the

USSR

IVANOVA, N. P., et al, Novoye v Diagnostike, Lechenii, Profilaktike Vazhnevshikh Zabolevaniy i Metodakh Issledovaniya, 1971, 128 pp, pp 51-52

wound with lysis of the sponge. Collagen sponges can be recommended for use in the general set of therapeutic measures for the treatment of patients with burns as a temporary dressing for the preparation of large injured surfaces for subsequent autoplasty.

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1/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--THE USE OF EPOXY COMPOUNDS FOR RESTORING THE FIT OF ANITFRICTION BEARINGS -U-

AUTHOR--YEVDOKIMOV, YU.A., YEVDOKIMOVA, I.I., STOLYAROV, YU.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 2, 1970, PP 51-52

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--EPOXY RESIN, GLUE, ANTIFRICTION BEARING, RAILWAY ROLLING STOCK

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1569 STEP NO--UR/0122/70/000/002/0051/0052

CIRC ACCESSION NO--AP0114157

ZZZZZZZZZZZZ UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0114157

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS PROPOSED FOR RESTORING THE SEATS AND FASTENING THE OUTER RACES OF BEARINGS IN THE GEAR BOXES OF MACHINE TRANSMISSIONS BY MEANS OF AN EPOXY GLUE. THE FORMULA FOR THE GLUE IS GIVEN, THE METHOD IS DESCRIBED, AND THE TEST RESULTS ARE PRESENTED. TESTS OF THE EPOXY MATERIAL, APPLIED BY THE INDICATED METHOD TO MOTORIZED RAILROAD HAND CARS, PROVED SATISFACTORY.

ZZZZZZZZZZZZ UNCLASSIFIED

USSR

UDC: 621.317.361

DYATLOV, A. P. and YEVDOKIMOV, Yu. F.

"Analyzing the Doppler Frequency Shift Simulator"

Kiev, Izvestiya VUZ - Radioelektronika, vol. 14, No. 5, 1971, pp 544-551

Abstract: The Doppler signal simulator transforms its input frequency, which may be in the high or intermediate frequency range, into some other frequency. In this process, the Doppler frequency shift is constant and independent of the input frequency. In checking the device, however, the frequency shift must be a function of the input frequency. This article analyzes a simulator which satisfies these requirements. As a substitute for the imitator, the subject of the analysis is a dispersionless delay line in which the delay varies linearly with time. Such a substitution is valid since the output of such a line is shifted in frequency with respect to the input in quasi-Doppler fashion. The authors discuss the linear tuning of the delay line, tuning the line with a sawtooth function having zero and finite retrace intervals, and the spectrum of the line's output signal with sawtooth tuning.

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USSR UDC: 621.396.619.13:621.374.4

YEVDOKIMOV, Yu. F., MURAVLEV, V. M., DANILENKO, A. I., BONDARENKO, V. P.

"A Frequency Divider With Variable Division Coefficient and High Phase Stability of the Output Frequency"

V sb. Materialy Nauchno-tekhn. konferentsii prof.-prepodavat. sostava Khar'kov. in-ta radioelektron. (Materials of the Scientific and Technical Conference of the Professional and Teaching Staff of the Khar'kov Institute of Radio Electronics), Khar'kov, Khar'kov University, 1969, pp 66-70 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D46)

Translation: A controllable frequency divider for digital synthesizers is proposed which has high stability of the phase of the output voltage and a speed which is independent of the number of digital places in the counter. The frequency divider consists of three scaler decades, counting and cadence pulse amplifiers, commutation devices for setting up different division coefficients in the decimal system of notation, a potential decoder and a reset circuit. All decades are connected in series and have nine outputs apiece which are connected in a predetermined sequence to the potential decoder. N. S.

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USSR UDC: 621.396.622.3

GELOZHE, Yu. A., YEVDOKIMOV, Yu. F.

"Singularities in the Design of Digital Frequency Synthesizers"

V sb. Materialy Nauchno-tekhn. konferentsii prof.-prepodavat. sostava Khar'kov. in-ta radioelektron. (Materials of the Scientific and Technical Conference of the Professional and Teaching Staff of the Khar'kov Institute of Radio Electronics), Khar'kov, Khar'kov University, pp 80-83 (from RZh--Radiotekhnika, No 12, Dec 70, Abstract No 12D45)

Translation: The paper deals with questions of the effect which individual modules and elements of a digital frequency synthesizer have on synthesizer characteristics, as well as problems of breaking the frequency range of the synthesizer down into subranges, and selecting the comparison frequency and type of phase detector. Bibliography of two titles. M. S.

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USSR

UDC 621.317.7:621.374.5

YEVDOKIMOV, YU. F. and DYATLOV, A. P.

"Realization of Tunable Delay Lines and Their Use in Automatic Correlators"

Tr. Taganrog. radiotekhn. in-ta (Works of the Taganrog Radio-Engineering Institute), 1972, vyp.28, pp 88-94 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 A272)

Translation: The authors study the possibility of realizing the discrete tuning of delay lines and the effect of discrete tuning on the spectrum of the signal at the delay line output. Discrete tuning is accomplished by connecting a section of the delay line between the input and the output with increasing time lag. Several methods of discrete tuning are considered. A.K.

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1/2 029 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--LOCAL X RAY SPECTRAL STUDY OF A ZIRCONIUM,NIOBIUM,NICKEL SYSTEM -U-

AUTHOR-(04)-YEVDOKIMOVA, A.D., KUZNETSOVA, S.M., RONAMI, G.N., SOKOLOVSKAYA, E.M.

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV. KHIM. 1970, 11(1), 62-6

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--X RAY ANALYSIS, SPECTROSCOPIC ANALYSIS, ZIRCONIUM ALLOY, NIOBIUM ALLOY, NICKEL ALLOY, METAL HEAT TREATMENT, PHASE DIAGRAM, PHYSICAL CHEMISTRY PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0614 STEP NO--UR/0189/70/011/001/0062/0066

CIRC ACCESSION NO--AP0107211

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107211

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TERNARY SYSTEM WAS STUDIED USING ZR-NB-NI ALLOYS WHICH HAD BEEN HEAT TREATED FOR 700 HR AT 800DEGREES AND 2000 HR AT 500DEGREES. THE RESULTS ARE TABULATED AND THE PHASE EQUIL. DIAGRAM IS GIVEN. NO ESSENTIAL CHANGE WAS OBSERVED IN THE CHARACTER OF THE INTERACTIONS FROM THOSE DETD. BY PHYS. CHEM. METHODS. THE COMPDS. ZRNI SUB5, ZR SUB2 NI SUB7, AND ZR SUB2 NI SUB5 FORM QUASIBINARY SECTIONS WITH NBNI SUB3. THE REGION OF HOMOGENEITY FOR NBNI SUB3 IS WIDENED GREATLY BY ALLOYING WITH ZR.

UNCLASSIFIED

USSR

UDC: 536.7

YEVDOKIMOVA, A. D., KUZNETSOVA, S. M., RONAMI, G. N., SOKOLOVSKAYA, YE. M., Department of General Chemistry, Moscow State University imeni M. V. Lomonosov, Moscow, Ministry of Higher and Secondary Specialized Education RSFSR

"Investigation of the Zirconium-Niobium-Nickel System by Local X-ray Spectral Analysis"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/Feb 70, pp 62-66

Abstract: Data are given from local X-ray spectral analysis of the ternary zirconium-niobium-nickel system using the MS-46 microanalyzer made by the French "Cameca" Company. Alloys of zirconium with niobium and nickel heat treated at 800°C for 700 hrs and at 500°C for 2,000 hrs were used. The error in determination of the element being analyzed was 1-2%. The resultant data are tabulated, and a diagram of the phase equilibria in the system at 800°C is given. The compounds $ZrNi_5$, Zr_2Ni_7 and Zr_2Ni_5 form quasi-binary cross sections with $NbNi_3$. The region of homogeneity of the intermetallic compound $NbNi_3$ is considerably expanded by alloying with zirconium. An analogous picture is observed in the case of Zr_7Ni_{10}. The phase diagram plotted from the experimental data agrees with those obtained by other methods of physical and chemical analysis.
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Pesticides

USSR

UDC 577.15/17

YEVDOKIMOVA, G. A., RAYTSINA, G. I., KOSTYUKEVICH, L. I., and MILYUSHCHINA, N. A., Peat Institute, Academy of Sciences Belorussian SSR

"Sulfuric Acid Hydrolyzates of Lowland Peats as Growth Stimulators for Microorganisms and Plants. Composition of Nitrogen-containing Compounds. II"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Khimicheskikh Nauk, No 6, 1970, pp 87-90

Abstract: The authors studied the amino acid composition of sulfuric acid hydrolyzates of five samples of lowland peat, obtained by the action of sulfuric acid of varying concentrations at atmospheric and elevated pressure. The amino acids were isolated from the hydrolyzates by absorption on cation exchanger KU-2, converted to acid form by treatment with chemically pure hydrochloric acid. It was found that hydrolysis of lowland peat with sulfuric acid (concentration 2-30 percent, temperature 90-95°, time 6 hours) gives a hydrolyzate containing 17 amino acids. The amino acid yield increases with increased acid concentration;

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YEVDOKIMOVA, G. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskikh Nauk, No 6, 1970, pp 87-90

6-6.5 percent of the organic substance of the hydrolyzate and about 2 percent of the organic substance of the peat are acted upon by 15-30 percent H_2SO_4. The nitrogen of the sulfuric acid hydrolyzates enters into the composition of amino acids (13.5-18.8 percent of the total nitrogen of the hydrolyzate) and ammonia compounds (34.1-59.5 percent).

USSR

UDC 613.644+613.65]-07:612.824

YEVDOKIMOVA, I. B., PETSKALEV, A. Z., and SHKARINOV, L. N., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

"Investigation Into Cerebral Circulation Under Separate and Joint Effects of Intensive Noise and Physical Loads"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1973, pp 1-5

Abstract: Effects of noise, physical exertion, and their combination on cerebral circulation were studied rheoencephalographically on tire plant laborers experiencing either noise alone (85-105 db) or noise (82-101 db) and physical exertion, and experimentally on males in a soundproof room subjected to either 108 db for 1 hour, physical exertion, or both. In the industrial setting blood circulation changed in both groups following a hypertensive pattern to varying degrees. Arterial tonus changed in most cases. Heightened noise (108 db) produced a drop in venous tonus and encumbered venous backflow. In the experimental setting noise alone resulted in weaker vasoconstriction and reduced blood flow, work alone resulted in heightened vasoconstriction and increased flow, while the combination lowered inflow in the presence of heightened vasoconstriction, indicating

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YEVDOKIMOVA, I. B., et al., Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1973, pp 1-5

a sharp increase in vascular tonus. It is suggested that under pathological conditions stable noise (85 db) alone and variable noise plus work would produce a hypertensive pattern, while stable noise at higher intensities would cause an atonic pattern coupled with poor venous backflow. Although noise and work combined facilitate cerebral circulation the heightened vessel tonus may cause malnutrition in brain cells. Thus all conditions studied here should be considered potentially dangerous.

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USSR UDC 612.824+612.85].014.45+613.644:[616.831-005+616.28

SHKARINOV, L. N., and YEVDOKIMOVA, I. B., Institute of Industrial Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

"Relationship Between Noise-Induced Functional Changes in the Cerebral Blood Supply and Acoustic Sensitivity"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 11, Nov 70, pp 23-26

Abstract: An investigation was made of cerebral hemodynamics and acoustic sensitivity in 176 industrial workers exposed to steady (108 db) or pulsed (105 db) noise over a period of years. It was found that cerebral hemodynamics is highly sensitive to noise, with functional changes occurring sooner than in the acoustic analysor. Hearing impairment was noted in a substantial number of persons in the group exposed to steady noise over a period of 6 years and in those exposed to pulsed noise for 11 years. Maximum hearing losses occurred in both groups after 20 to 25 years of work. Other things being equal, the extent and rate of functional shifts in the cerebral blood supply vary with the amount of acoustic energy entering the ear. Over a period of years, intense industrial noise, particularly steady

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SHKARINOV, L. N., and YEVDOKIMOVA, I. B., Gigiyena Truda i Professional'nyye Zabolevaniya, No 11, Nov 70, pp 23-26

noise at 108 db or more, will impair the normal circulation of blood in the brain and thereby create unfavorable conditions for the functioning of the acoustic analysor. The temporary shifts eventually become persistent and irreversible, resulting in loss of hearing.

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1/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--THE USE OF EPOXY COMPOUNDS FOR RESTORING THE FIT OF ANITFRICTION BEARINGS -U-

AUTHOR--YEVDOKIMOV, YU.A., YEVDOKIMOVA, I.I., STOLYAROV, YU.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 2, 1970, PP 51-52

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--EPOXY RESIN, GLUE, ANTIFRICTION BEARING, RAILWAY ROLLING STOCK

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1569 STEP NO--UR/0122/70/000/002/0051/0052

CIRC ACCESSION NO--AP0114157

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0114157

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS PROPOSED FOR RESTORING THE SEATS AND FASTENING THE OUTER RACES OF BEARINGS IN THE GEAR BOXES OF MACHINE TRANSMISSIONS BY MEANS OF AN EPOXY GLUE. THE FORMULA FOR THE GLUE IS GIVEN, THE METHOD IS DESCRIBED, AND THE TEST RESULTS ARE PRESENTED. TESTS OF THE EPOXY MATERIAL, APPLIED BY THE INDICATED METHOD TO MOTORIZED RAILROAD HAND CARS, PROVED SATISFACTORY.

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Oceanography

Oceanography

Source: JPRS #58025 19 Jan 73

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UDC 551.46.08:627.913

POSSIBILITY OF UTILIZING MODERN SELF-CONTAINED BUOY STATIONS FOR OCEANOGRAPHIC RESEARCH IN STRONG CURRENT AREAS

[Article by Candidate of Technical Sciences A. S. Gorshkov, G. N. Goncharov, Doctor of Geographic Sciences I. N. Davidan, L. N. Yevdokimova, Candidate of Geographic Sciences Yu. V. Sustavov, Central Scientific Research Institute imeni A. N. Krylov, State Oceanographic Institute; Moscow, Meteorologiya i Gidrologiya, Russian, No 11, 1972, submitted 13 June 1972, pp 67-74]

The results are discussed from calculations and simulation testing to determine the hydrodynamic and weight loads experienced by self-contained buoy stations in deep-water strong current zones of the ocean. The flow velocities were established at which it is possible to install GM-51 and BS-6000 buoy stations. Recommendations are made with respect to the development of self-contained buoy stations for strong-current areas.

Beginning in 1960, the method of measuring currents by installing self-contained buoy stations began to be introduced into the practice of oceanographic operations of the institutions of the hydrometeorological service. In the initial stop, the buoy stations were assembled from nonstandard equipment using awkward BZ-720 type buoys (lifting capacity 650 kg with a mass of 417 kg) and "pinch" type buoys (lifting capacity 2,000 kg with a mass of 1,500 kg) or homemade buoys made of metal and foam plastic with a lifting capacity of 1,000-1,500 kg.

In the middle of the 1960's, a definite amount of experience had already been accumulated which permitted the development and gradual introduction of more modern designs of self-contained buoy stations into practice (GM-46, GM-47, GM-49, GM-50, and GM-51). These buoys were designed for taking oceanographic measurements in areas with different depths. Procedural instructions with respect to working with the self-contained buoy stations were published simultaneously. The measurements of the oceanological characteristics on the self-contained buoy stations permitted broad information to be obtained on the currents which contributed greatly to the precision of definition of our concepts of the dynamic processes taking place in the oceans and seas.

YEVDOKIMOVA, L. N.